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10/748,988	12/30/2003	David P. Goren	40146/25701	8253
83694 7590 03/27/2009 Fay Kaplun & Marcin, LLP/ Motorola 150 Broadway Suite 702 New York, NY 10038				
EXAMINER				
NGUYEN, DUC M				
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/748,988

**Applicant(s)**

GOREN, DAVID P.

**Examiner**

DUC M. NGUYEN

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 14 is/are allowed.
- 6) ☒ Claim(s) 1 and 8-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date \_\_\_\_\_

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

This action is in response to applicant's response filed on 10/03/08. Claims 1, 8-14 are now pending in the present application. **This action is made final.**

#### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims **1, 8, 11-13** are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As to claim 1, the claim recites the limitation of "wherein no portion of at least one of the non-intersecting antenna patterns with sufficient signal strength to enable location of said mobile units overlaps a portion of another of the non- intersecting antenna patterns with sufficient signal strength to enable location of said mobile units", this limitation is **never** described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

Here, the claim is merely amended to overcome the prior art based on the speculation of drawings and **never** described in the specification in such a way as to

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enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

***Claim Rejections - 35 USC 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims **1, 8, 11-13** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Hassett et al (US 5,406,275)**.

Regarding claim **1**, **Hassett** teaches a wireless network wherein mobile units are provided with radios for transmitting and receiving data communications messages between said mobile units and fixed access points (see Fig. 1 wherein the "vehicle transceiver" would on the claimed "mobile unit", the stationary transceiver 18-22" would read on the claimed "fixed access points"), and wherein said mobile units are located using signal strength for radio communications between said mobile units and said access points (see col. 4, lines 16-20 and col. 7, lines 9-17), the improvement wherein at least some of said access points are provided with antennas having antenna patterns with selected pattern shapes including horizontally offset non-intersecting directional antenna patterns for enhancing location of said mobile units (see Figs. 1-2 and col. 4, lines 46-51).

Here, since the toll booth plaza in Hassett would obviously comprise a LAN, it is clear that the wireless network in Hassett would be applicable to a wireless LAN and would work equally well. Therefore, the claimed limitations are made obvious by Hassett, noting that the "local area network" recitation has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and the portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. *Kropa v. Robie*, 88 USPQ 478 (CCPA 1951).

Further, it would have been obvious to one skilled in the art at the time the invention was made to modify Hassett for designing antenna patterns such that no portion of at least one of the non-intersecting antenna patterns with sufficient signal strength to enable location of said mobile units overlaps a portion of another of the non-intersecting antenna patterns with sufficient signal strength to enable location of said mobile units as claimed, for further improving the performance of the system by minimizing interferences as much as possible.

Regarding claim **8**, **Hassett** would teach said horizontally offset directional beams are horizontally offset in position as claimed (see Fig. 1).

Regarding claim **11**, **Hassett** would teach said antennas locating at selected heights for achieving selected pattern shapes as claimed (see Fig. 1).

Regarding claim **12**, **Hassett** would teach an axis of each of directional antenna patterns are arranged in parallel relation to each other as claimed (see Fig. 1).

Regarding claim **13**, **Hassett** would teach a first group of antenna patterns (i.e, a group of odd numbered antennas) radiate between a second group of antenna patterns (i.e, a group of even numbered antennas) as claimed (see Fig. 1).

5. Claims **9-10** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Hassett** in view of **Robinson** (US 6,700,493).

Regarding claim **9**, **Hassett** would teach all the claimed limitations, see claim 8 above, except for some of antennas are mounted near the peripheral of a facility. However, it is noted that since **Hassett** suggested that the method can be applied for **tracking packages** (see col. 9, lines 45-46). Therefore, it would have been obvious that for tracking packages inside a facility in the similar way as disclosed by **Robinson** (see Fig. 7 and col. 7, lines 40-60), some of the antennas in **Hassett** would obviously be mounted near the peripheral of a facility as claimed, for optimizing the coverage area of a directional antenna beam in an indoor facility having rectangular shapes.

Regarding claim **10**, the claim is rejected for the same reason as set forth in claim 9 above. In addition, it would have been obvious to one skilled in the art at the time the invention was made to modify **Hassett** for providing said horizontally offset directional beams in a horizontally offset in position to correspond to aisles in a facility

as claimed, for optimizing the coverage area of the directional antenna beam with the rectangular shape of the aisle.

6. Claims **9-10** are rejected under 35 U.S.C. 103(a) as being unpatentable by **Hassett** in view of **Chaco et al** (US 5,455,851).

Regarding claim **9**, **Hassett** would teach all the claimed limitations, see claim 8 above, except for some of antennas are mounted near the peripheral of a facility. However, it is noted that since **Hassett** suggested that the method can be applied for **tracking packages** (see col. 9, lines 45-46). Therefore, it would have been obvious that for tracking objects inside a facility in the similar way as disclosed by **Chaco** (see Fig. 1), some of the antennas in **Hassett** would obviously be mounted near the peripheral of a facility as claimed, for optimizing the coverage area of a directional antenna beam in an indoor facility. Also note for a LAN and the horizontally offset non-intersecting directional antenna patterns apparently illustrated by dotted lines in Fig. 1 of **Chaco**.

Regarding claim **10**, the claim is rejected for the same reason as set forth in claim 9 above. In addition, it would have been obvious to one skilled in the art at the time the invention was made to modify **Hassett** for providing said horizontally offset directional beams in a horizontally offset in position to correspond to aisles in a facility as claimed, for optimizing the coverage area of the directional antenna beam with the rectangular shape of the aisle.

***Allowable Subject Matter***

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7. Claim 14 is allowed.

***Response to Arguments***

Applicant's arguments filed 10/3/08 have been fully considered but they are not persuasive.

In the Remark, Applicant contends that

Claim 1 has been amended. Claim 14 has been allowed. Claims 2-7 have been cancelled. Thus, claims 1 and 8-14 are pending in the present application. No new matter has been added. Claims 1, 8, and 11-13 stand rejected under 35 U.S.C. § 112, ¶1, as failing to comply with the enablement requirement. Applicant has amended claim 1 to recite that there is no overlap between those portions of antenna patterns that have insufficient signal strength to enable mobile unit location. Thus, at most, the claim permits overlap for portions of antenna signals that are of such trivial strength as to be useless for accomplishing the goal of the claimed invention. This amendment thus addresses the physics-based concern of the Examiner without departing from the central point of the prior amendment, which is that with respect to those portions of the antenna patterns that are sufficiently strong for enabling the location of the mobile units, there is no overlap. Accordingly, withdrawal of this rejection is requested.

In response, the examiner asserts that claim 1 is merely amended to overcome the prior art and was never described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The amendment is just merely based on speculation of the drawings, i.e., Fig. 2 of the specification and Figs. 1-2 of Hassett. However, since the specification fails to describe the claimed limitation, the 112 first paragraph rejection is proper.

Applicant further contends

Claims 1, 8, and 11-13 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,406,275 to Hassett et al. ("Hassett"). The Examiner agrees, at least implicitly, that Hassett does not teach the non-overlapping antenna patterns of the claim. The Examiner nevertheless regards this as an obvious difference, since one of ordinary skill in the art would have recognized that non-overlapping patterns "improv[e] the performance of the system by minimizing interference as much as possible." Office Action at page 4. The Examiner is not clear as to what type of interference would be obviated were Hassett to be modified to avoid pattern overlaps, but Hassett already avoids or at least minimizes interference by assigning each lane antenna its own code, and by employing phase shift keying and manchester encoding. Thus, interference appears to have been handled already by Hassett, and so the



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proposed modification of non-overlapping antenna patterns would appear to have little appeal to one of ordinary skill in the art. Moreover, incorporating non-overlapping patterns in the Hassett system would actually be detrimental to the accomplishment of its purpose. The purpose of the Hassett system is to locate vehicles equipped with mobile transceivers using a set of antennas disposed in the toll lanes of a highway. A vehicle cannot be assured to always be traveling in the center of the lane where the antenna pattern is at its strongest; sometimes a vehicle will skirt the edge of the lane. The edge of the lane is where the Examiner proposes that the antenna patterns of neighboring lanes avoid overlapping each other, in contradiction to the clear overlap shown in Figure 1. Were the Hassett system modified to have no coverage over its lane edges, many cars would avoid detection and thus frustrate the central purpose of the Hassett system. Therefore, since one of ordinary skill in the art would find unworkable the proposal of having the lane antennas transmit non-overlapping fields, withdrawal of this rejection is requested.

In response, it is believed that the claimed invention would obviously comprise each antenna own code in order to identify its antenna source for location detection. Further, the overlapping of antenna beams would obviously cause interferences. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify Hassett for designing antenna patterns such that no portion of at least one of the non-intersecting antenna patterns with sufficient signal strength to enable location of said mobile units overlaps a portion of another of the non-intersecting antenna patterns with sufficient signal strength to enable location of said mobile units as claimed, for further improving the performance of the system by minimizing interferences as much as possible.

Just for the sakes of arguments, note also that Fig. 1 shows overlapping of canopies, not antenna side lobes. Further, even though Fig. 1 shows overlapping of side lobes, these side lobes would not provide sufficient signal strength to enable location of vehicles. Therefore, when a vehicle enter the antenna coverage beam that is inside the antenna beam but outside or beyond the coverage area of its canopy, this would read on the claimed limitation "no portion of at least one of the non-intersecting antenna patterns with sufficient signal strength to enable location of said mobile units

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overlaps a portion of another of the non- intersecting antenna patterns with sufficient signal strength to enable location of said mobile units” as claimed.

For foregoing reasons, the examiner believes that the pending claims (1, 8-13) are not allowable over the cited prior art.

***Conclusion***

8. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

**or faxed to:**

(571) 273-8300 (for **formal** communications intended for entry)

(571)-273-7893 (for informal or **draft** communications).

Hand-delivered responses should be brought to Customer Service Window, Randolph Building, 401 Dulany Street, Alexandria, VA 22314.

Any inquiry concerning this communication or communications from the examiner should be directed to Duc M. Nguyen whose telephone number is (571) 272-7893, Monday-Thursday (9:00 AM - 5:00 PM).

Or to Nay Muang (Supervisor) whose telephone number is (571) 272-7882.

/Duc M. Nguyen/

Primary Examiner, Art Unit 2618

Mar 23, 2009